

```

2010 PRINT#480," TYPE LETTER TO ERASE ";
2020 IF INKEY$="" THEN 2020
2030 RETURN
2100 K=FN:FOR I=1 TO FN
2110 L$=LEFT$(F$(I),1)
2120 L=ASC(L$)
2130 IFL=42 THEN NEXT I:GOTO 2200
2140 Z=Z+1:IF F$(Z)=F$(I):F(Z)=F(I)
2150 X=USR(X)
2160 NEXT I:GOTO 2200
2200 SC=2:Y=1:FN=Z
2210 PRINT#SC, FN$(Y);
2220 IF Y=FN THEN 2250
2230 Y=Y+1:SC=SC+32
2240 GOTO 2210
2250 FOR I=1 TO FN
2260 F$(I)=FN$(I)
2270 NEXT I
2280 FOR I=FN TO 14
2290 PRINT#I*32,"
2300 NEXT I:RETURN

```

## Hello program

This hello program loads the directory onto the screen and conveniently allows the user to load, run or erase programs without typing lengthy filenames.

If there are any filenames that you don't want to come up in the

hello program, rename the filenames to have an asterisk at the front.

e.g. a file - 'picture' becomes (\*Picture).

**G Tunny  
Gorokan  
NSW**

```

00640 S=S+1:IFS=A:S=0:GOTO 670
00650 FOR D=S+1 TO A:IF P1(D)<=P1(S):NEXT D:GOTO 640
00660 GOSUB 710:GOTO 640
00670 S=S+1:IFS=A:RETURN
00680 FOR D=S+1 TO A:IF P1(D)<>P1(S):NEXT D:GOTO 670
00690 IF P1(D)>=P1(S) THEN 670
00700 GOSUB 710:GOTO 670
00710 N1$(0)=N1$(D):N1$(D)=N1$(S):N1$(S)=N1$(0)
00720 P(0)=P(D):P(D)=P(S):P(S)=P(0)
00730 W(0)=W(D):W(D)=W(S):W(S)=W(0)
00740 L(0)=L(D):L(D)=L(S):L(S)=L(0)
00750 P1(0)=P1(D):P1(D)=P1(S):P1(S)=P1(0)
00760 RETURN

```

## Oops, I goof'd

My 8-Ball Percentages program published in the October edition has a minor flaw. The program as submitted will run. However, the sorts as described will not work fully due to my omission of NEXTD in lines 650 and 680. An upgrading of the routine has also

been performed and the lines 640 to 760 should be amended. I humbly apologise for any inconvenience caused by my oversight and promise that all care will be taken in future.

**Gary A Laming  
Mile End  
SA**

## VZ 200/300

```

40 REM VISISORT
50 REM FOR VZ200/300
60 REM BY P.J.SHEPPARD
80 CLS
100 PRINT#200,"-< VISISORT >="
105 ' INITIALISE VARIABLES, ETC
110 CLEAR#0:DIMS(20,2),A$(13),S$(13):X1=400:X2=25:Q$=CHR$(34)
120 PP=36:N1=154:N2=250:N3=186:N5=411:A1=30:A2=36:A3=36
130 SOUND$,9
140 CLS
150 PRINT#PRINT" * VISISORT *

```

```

160 PRINT" -----":PRINT
170 PRINT" (1)..STANDARD BUBBLE SORT
180 PRINT" (2)..BUBBLE SORT WITH SINKER
190 PRINT" (3)..SUPER BUBBLE SORT
200 PRINT" (4)..EXCHANGE SORT
210 PRINT" (5)..DELAYED REPLACEMENT SORT
220 PRINT" (6)..SHELL SORT
230 PRINT" (7)..SHELL - METZNER SORT
240 PRINT" (8)..QUICK - SORT
250 PRINT" (9)..EXIT PROGRAM
260 PRINT#451,"SELECT SORT ROUTINE ...";
265 D$=INKEY$
270 FOR J=0 TO 9:CH$=INKEY$:J=(CH$<"1" OR CH$<"9")*NEXT
280 CH=VAL(CH$):IF CH=9 THEN 230 ELSE PRINT CH: SOUND$,7;0,2
290 CLS
300 GOSUB 430
310 FOR K=0 TO 9:K$=S$(K):PRINT#32*K+32,A$(K);:NEXT
320 NE=0:NC=0:NO=0:NI=186
330 IF NS>9 THEN NI=184
335 ' SORT STATUS
340 PRINT#26,"NO OF ITEMS .. "USING"##";NS+1
350 PRINT#108,"-----";
360 PRINT#140,"COMPARISONS .. 0";
370 PRINT#172,"EXCHANGES .. 0";
380 PRINT#204,"-----";
390 PRINT#236,"TOTAL ACTIONS .. 0";
400 PRINT#268,"-----";
405 ' SORT ROUTINES
410 IF CH=1 GOSUB 1210 ELSE IF CH=2 GOSUB 1400 ELSE IF CH=3 GOSUB 1330
414 IF CH=4 GOSUB 1500 ELSE IF CH=5 GOSUB 1050 ELSE IF CH=6 GOSUB 1840
418 IF CH=7 GOSUB 1970 ELSE IF CH=8 GOSUB 2120
420 GOSUB 860
430 PRINT#300,"*****";
440 PRINT#332,"% SORT COMPLETE %";
450 PRINT#364,"*****";
460 PRINT#423,"RESORT ORIGINAL";
470 PRINT#461,"LIST.....(Y/N)";
475 D$=INKEY$
480 FOR J=0 TO 9:R$=INKEY$:J=(R$<"Y" AND R$<"N")*NEXT:GOTO 480
485 SOUND$,1
490 IF R$="Y" THEN 750
495 ' SORT DATA
500 FF=0:NS$=""
510 PRINT#HOW MANY ITEMS TO SORT"
520 PRINT#SELECT BETWEEN 1 AND 14 -- ";
525 D$=INKEY$:SS$=""
530 SS$=INKEY$:SOUND$,1
535 IF SS$="" THEN 525 ELSE SOUND$,1
540 IF SS$="1" ANUN$<"1" THEN NS$=NS$+SS$+FF:PRINT#SS$:GOTO 530
550 IF FF=1 AND (SS$<"0" OR SS$<"4") OR FF=0 AND (SS$<"4" OR SS$<"9"):530
560 PRINT#SS$:NS$=NS$+SS$:NS=VAL(NS$)+1
570 PRINT#PRINT#SUPPLIED BY COMPUTER OR USER ?"
580 PRINT#PRESS "Q$C"Q$ OR "Q$U"Q$"...";
585 D$=INKEY$:RI$=INKEY$
590 IF RI$="U" THEN 600 ELSE IF RI$="C" THEN PRINT#COMPUTER ELSE 585
595 ' COMPUTER DATA
600 PRINT#PRINT#NUMBERS OR LETTERS?"
610 PRINT#PRESS "Q$N"Q$ OR "Q$L"Q$"...";
615 D$=INKEY$
620 FOR J=0 TO 9:R$=INKEY$:J=(R$<"N" AND R$<"L")*NEXT
630 IF R$="N" THEN PRINT#NUMBERS ELSE IF R$="L" THEN PRINT#LETTERS"
635 SOUND$,1
640 FOR K=0 TO 9
650 IF R$="L" THEN S$(K)=CHR$(RND(26)+64) ELSE S$(K)=STR$(RND(26)+10)
660 NEXT K
670 GOTO 50
675 ' USERS DATA
680 CLS
690 PRINT#ONE CHARACTER PER LINE MAXIMUM"
700 PRINT#(LETTERS OR NUMBERS ONLY)"
710 FOR K=0 TO 9
720 PRINT#ITEM "K"= ";
725 D$=INKEY$:FOR J=0 TO 9:S$(K)=INKEY$
730 J=(S$(K)<"0" OR S$(K)<"Z" OR S$(K)<"9" OR S$(K)<"A")*NEXT
735 NEXT K
740 PRINT#S$(K):SOUND$,1:NEXT K
750 R$="N"
760 CLS
770 RETURN
780 PRINT#336,"PRESS (RETURN) TO";
790 PRINT#128,"START THE SORT...";
795 D$=INKEY$
800 K$=INKEY$:IF K$<CHR$(13) THEN 800
810 GOSUB 860
815 ' SORT SPEED
820 PRINT#336,"SPEED SET AT :-"SQR(X1/25);

```

ETI FEBRUARY '89

**The Wireless Institute of Australia (W.I.A) represents radio amateurs in local and international matters and provides assistance, education and many other services. As a member you will receive:**

- **AMATEUR RADIO** the monthly magazine of the WIA.
- News of DX, propagation, clubs, satellites, etc.

- A world-wide QSL service
- Weekly news and information broadcasts
- Books and publications sales
- Classes for students for the Novice, Limited and Full Call Certificates
- Lessons by correspondence
- Participation in contests, seminars and field days
- Sole representation for amateurs at government level

**Forward this coupon, or write to:**

Registered Address: 3/105 Hawthorn Road, Caulfield North

Please send a WIA membership form to:

NAME .....

**Address** .....

..... **Postcode** .....

BKP88/129A

**F E E D F O R W A R D**

```

930 PRINT#428,"0 - 9 ALTERS SPEED";
940 PRINT#460,Q#1,"Q#1 STOPS PROGRAM";
950 RETURN
960 FORSCA=1107:PRINT#268+SCA#32,"
";NEXT
965 RETURN
970 ' POINTER ROUTINE
980 NC=NC+1:PRINT#1,USING"###";NC
990 NC=NC+NE:PRINT#2,USING"###";ND
995 PRINT#32XX+PP,"<~";
910 PRINT#22XY+PP,"<~";
920 FORTI=1TOX1:NEXT
930 PRINT#32XX+PP," ";
940 PRINT#32XY+PP," ";
950 D#+INKEY#;H#+INKEY#
960 IFH#<0"THENX1=VAL(U#)*2#25:X2=SQRLX1);
PRINT#6,VAL(U#);
970 IFH#>0"THEN#GOSUBB66:PRINT#33,"SORT
TERMINATED";GOTO460
980 RETURN
990 ' SWITCHING ROUTINE
1000 FORK=0TO4
1010 PRINT#32X1+K+32," "A#C1);
1020 PRINT#32X1+K+31," "A#C1);
1030 NEXTK
1040 PRINT#32X1+32," "A#C1);
1050 DF=J-I
1060 FORK=1TODF
1070 PRINT#22X1+K+1+32," "
";
1080 PRINT#32X1+K+1+32,A#C1);
1090 FORTI=1TOX1:NEXT
1100 PRINT#32X1+K+1+32," ";
1110 PRINT#32X1+K+1+32,A#C1);
1120 NEXTK
1130 FORK=4TO3STEP-1
1140 PRINT#32X1+K+32,A#C1);
1150 PRINT#32X1+K+32,A#C1);
1160 NEXTK
1170 NE=NE+1
1180 PRINT#3,USING"###";NE;
1190 IE#A#C1);A#C1);A#C1);A#C1);IE#
1200 RETURN
1210 *PRINT#2,"***** BUBBLE SORT *****
1250 GOSUB780
1290 FL=0
1240 FORI=0TONE-1
1250 X=I+1-Y+J:Y=J:GOSUB880
1260 IFA#C1)<A#CJ)THEN1290
1270 FL=1
1280 GOSUB1000
1290 NEXTI
1300 IFFL=1THEN1230
1310 GOSUB420
1320 RETURN
1330 *PRINT#2,"***** SUPER BUBBLESORT *****
1340 GOSUB780
1350 FORI=0TONE-1
1360 J=I+1:X=I+Y+J:GOSUB880
1370 IFA#C1)<A#CJ)THEN1400
1380 GOSUB1000
1390 J=J-1
1400 IFJ=0THEN1450
1410 J=I+1-Y+J:Y=J:GOSUB880
1420 IFA#C1)<A#CJ)THEN1400
1430 GOSUB1000
1440 GOTO1400
1450 J=J-1
1460 NEXTI
1470 RETURN
1480 *PRINT#2,"***** BUBBLE SORT WITH SINKER *****
1490 SC=NS:GOSUB780
1500 FL=0:P=5:G=1
1510 FORI=0TO5
1520 X=I+1-Y+J:Y=J:GOSUB880
1530 IFA#C1)<A#CJ)THEN1550
1540 FL=1:GOTO1500
1550 NEXTI
1560 IFFL=1THEN1500
1570 GOSUB420
1580 RETURN
1590 PRINT#2,"***** EXCHANGE SORT *****
1600 GOSUB780
1610 FORI=0TONE-1
1620 FORJ=I+1TONE
1630 X=I+Y+J:GOSUB880
1640 IFA#C1)<A#CJ)THEN1660
1650 GOSUB1000
1660 NEXTJ,I
1670 GOSUB420
1680 RETURN
1690 *PRINT#2,"***** DELAYED REPLACEMENT SORT *****
1700 GOSUB780
1710 J=0:R=I+1
1720 I=I+1
1730 IFI=NSTHEN1870
1740 J=I-R+1
1750 X=J+Y+R:GOSUB880
1760 IFA#C1)<A#CJ)THEN1780
1770 J=R
1780 R=J+1:IFR<NSTHEN1750
1790 X=J+Y+R:THEN1720
1800 GOSUB1000
1810 GOTO1720
1820 GOSUB420
1830 RETURN
1840 *PRINT#2,"***** SHELL SORT *****
1850 GOSUB780
1860 N=NS
1870 M=INT(N/2):IFM=0THEN1950
1880 H=0
1890 I=H+FL=0:J=I+1:X=I+Y+J:GOSUB880
1900 IFA#C1)<A#CJ)THEN1930
1910 GOSUB1000
1920 FL=1
1930 H=H+1:IFJ<NSTHEN1890
1940 IFFL=1ANDH=1THEN1880ELSE1870
1950 GOSUB420
1960 RETURN
1970 *PRINT#2,"***** SHELL - METZNER SORT *****
1980 GOSUB780
1990 N=NS
2000 M=INT(N/2):IFM=0THEN2100
2010 F=NS-M
2020 H=0
2030 I=H
2040 J=I+M:X=I+Y+J:GOSUB880
2050 IFA#C1)<A#CJ)THEN2080
2060 GOSUB1000
2070 I=I-M:IFJ=0THEN2040
2080 H=H+1
2090 IFFH=PTHEN2000ELSE2030
2100 GOSUB420
2110 RETURN
2120 *PRINT#2,"***** QUICK SORT *****
2130 GOSUB780
2140 I1=0:J1=NS:P=0
2150 PRINT#300,"STACK COUNTER...\"USING"###";P
2160 I=I1
2170 PRINT#332,"SUPER-RECORD...\"A#C1);
2180 J=J1+S=1
2190 X=I+Y+J:GOSUB880
2200 IFA#C1)<A#CJ)THEN2230
2210 GOSUB1000
2220 S=S-1
2230 IFS=1THENI=I+1ELSEJ=J-1
2240 IFI<JTHEN2190
2250 IFI=J1THEN2270
2260 P=P+1+S$CP,1;J=J+1+S$CP,2;J1=J1-1
2270 J1=I-1
2280 IFI<J1THEN2150
2290 IFFP=0THEN420
2300 I1=S$CP,1;J1=J1+S$CP,2;P=P-1
2310 GOTO2150
2320 ' EXIT
2325 CLEAR#0:CLS:END

```

This program implements eight sort techniques at selectable speeds of which Q is the fastest. Sort data can be either letters or numbers which can be chosen by the computer or the user. The program is approximately 5.6 k

long and runs on the VZ 200/300, but not on the unexpanded VZ 200. Instructions to use it are contained in the program.

**PJ Sheppard**  
**Christchurch**  
**New Zealand**